Claims

We claim:

1. A data storage device comprising a controller, a first non-volatile memory unit, a second non-volatile memory unit, and a data interface, the controller being arranged upon the device receiving through the data interface data for storage, to store the data in the first non-volatile memory unit, and subsequently to transfer the data to the flash memory unit.

2. A data storage device according to claim 1 in which the first non-volatile memory unit is an FeRAM memory unit.

3. A data storage device according to claim 1 in which the first non-volatile memory unit is an MRAM memory unit.

4. A data storage device according to claim 1 in which the second non-volatile memory unit is a flash memory unit.

5. A data storage device according to claim 1 which is arranged, upon receiving data for storage, to determine whether the first non-volatile memory unit has available unused capacity to store the data, and, upon the determination being negative, to discard the data.

6. A data storage device according to claim 1 which is arranged, upon receiving data for storage, to determine whether the first non-volatile memory unit has available unused capacity to store the data, and, upon the determination being negative, to store the data directly in the second non-volatile memory unit.

7. A data storage device according to claim 1 in which the controller is arranged, in response to a read signal, to extract data from the second non-volatile memory unit and transmit it out of the data storage device.

8. A data storage device according to claim 1 in which the first non-volatile memory unit, controller and second non-volatile memory unit are provided by different integrated circuit elements, and the integrated circuit elements are packaged together to form a one-piece unit.